#### (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

# (19) World Intellectual Property Organization International Bureau



## 

#### (43) International Publication Date 10 March 2005 (10.03.2005)

#### **PCT**

# (10) International Publication Number WO 2005/022210 A1

(51) International Patent Classification<sup>7</sup>: C03C 12/02

ion<sup>7</sup>: G02B 5/128,

(21) International Application Number:

PCT/GB2004/003652

(22) International Filing Date: 27 August 2004 (27.08.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

0320285.0 03255421.4 29 August 2003 (29.08.2003) GB 29 August 2003 (29.08.2003) EP

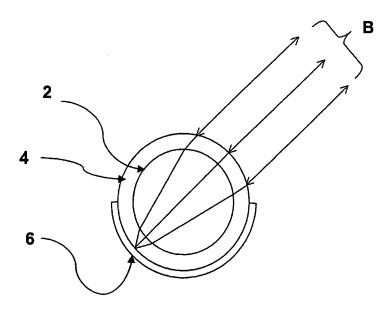
- (71) Applicant (for all designated States except US): BAE SYSTEMS PLC [GB/GB]; 6 Carlton Gardens, London, Greater London SW1Y 5AD (GB).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): HANDEREK, Vincent, Andrei [GB/GB]; BAE Systems ATC, West Hanningfield Road, Great Baddow, Chelmsford, Essex CM2

8HN (GB). LAYCOCK, Leslie, Charles [GB/GB]; BAE Systems ATC, West Hanningfield Road, Great Baddow, Chelmsford, Essex CM2 8HN (GB).

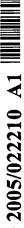
- (74) Agents: MACLEAN, Martin, David et al., Bae Systems plc, Group IP Department, Lancaster House, P.O. Box 87, Farnborough Aerospace Centre, Farnborough, Hampshire GU14 6YU (GB).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),

[Continued on next page]

(54) Title: RETROREFLECTIVE DEVICE COMPRISING GRADIENT INDEX LENSES



(57) Abstract: A retroreflective device comprising a substantially spherical graded refractive index lens, referred to as a GRIN-sphere lens (2), a reflective part for retroreflecting (6) a radiation beam (B) passing through the graded refractive index lens and, at least partially surrounding the lens, a transparent material (4) having a substantially uniform refractive index.



### WO 2005/022210 A1



FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, ning of each regular issue of the PCT Gazette. GW, ML, MR, NE, SN, TD, TG).

European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the begin-

#### Published:

with international search report